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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,825	03/22/2004	Kishio Yokouchi	0 2EK-105071	1490
30764	7590	12/14/2005	EXAMINER	
SHEPPARD, MULLIN, RICHTER & HAMPTON LLP			SONG, SARAH U	
333 SOUTH HOPE STREET			ART UNIT	
48TH FLOOR			PAPER NUMBER	
LOS ANGELES, CA 90071-1448			2874	

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/805,825	YOKOUCHI, KISHIO	
	Examiner	Art Unit	
	Sarah Song	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 13-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>0704</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-12 in the reply filed on November 18, 2005 is acknowledged.

2. Claims 13-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Election was made **without** traverse in the reply filed on November 18, 2005.

Information Disclosure Statement

3. The prior art documents submitted by the applicant in the Information Disclosure Statement filed on July 26, 2004 have all been considered and made of record (note the attached copy of form PTO-1449).

Claim Objections

4. Claim 6 is objected to because of the following informalities: "the space between said first and second substrates" lack proper antecedent basis. Claim 1 recites "a second substrate having a second surface positioned in opposing spaced apart relationship from said first surface", which does not necessarily impart a space between said first and second substrates, thus not providing antecedent basis for "the space between said first and second substrates". Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murali (U.S. Patent 6,788,836) in view of Aoki et al. (U.S. Patent 6,236,786).**

7. Regarding claims 1-9 and 11-12, Murali discloses an apparatus for transmitting light comprising: a first substrate 2 having a first surface including at least one first optically active area 30 (semiconductor VCSEL); a second substrate 100 having a second surface positioned in opposing spaced apart relationship from said first surface, where said second surface has at least one second optically active area 32 (photodiode) opposing said at least one first optically active area; and a waveguide in via 3 between said first and second optically active areas on said first and second surfaces. Said first substrate is an optical circuit board and said second substrate is an IC. Each of said first and second substrates comprise a plurality of optically active areas. The first and second surfaces are substantially parallel and spaced apart by a distance, which is in the range of about 0.02 mm to about 0.15 mm (column 3, line 20). See Figure 6.

8. Murali discloses that vias 3 may include core/cladding or polymer (column 2, lines 39-45), but does not expressly disclose said waveguide comprises a polymer core *and* a cladding for transmitting light therebetween, wherein said cladding comprises a second polymer, and wherein said first polymer is a photosensitive fluorinated polymer.

9. Aoki et al. discloses a substrate via comprising a polymer core 4 and a cladding 5 for transmitting light therebetween, wherein said cladding comprises a second polymer, and wherein said first polymer is a photosensitive fluorinated polymer. See column 3, lines 20-35.

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10. Therefore, it would have been obvious to one having ordinary skill in the art to provide the photosensitive fluorinated polymer core and polymer cladding of Aoki et al. in the via of Murali.

11. One of ordinary skill in the art would have been motivated to provide the photosensitive fluorinated polymer core and polymer cladding since the modification would have provided improved transmission efficiency and ease of manufacture as disclosed by Aoki et al. in column 5, lines 1-26.

12. Resultantly the space between said first and second substrate surfaces is substantially filled with polymeric material (i.e. the core and cladding material). Alternatively, the first and second substrates themselves would also be spaced apart by a distance resulting from the polymeric core/cladding film that surrounds the substrate, due to the manufacturing process for the waveguide, as shown in the figures of Aoki et al. Furthermore, although not expressly disclosed, it would also have been obvious to one of ordinary skill in the art to embed at least one or more additional structures within said polymeric material to provide additional functionality to the apparatus resulting in a higher degree of integration.

13. Regarding claim 10, Murali does not expressly disclose the second substrate to be a waveguide daughter board. However, it is well known in the art to couple waveguide daughter boards to optical circuit boards. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a similar apparatus comprising a waveguide daughter board to provide the above-noted advantages of transmission efficiency and ease of manufacture to the waveguide daughter board.


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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarah Song whose telephone number is 571-272-2359. The examiner can normally be reached on M-Th 7:30am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 571-272-2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sarah Song
Primary Examiner
Group Art Unit 2874